

**Introduction to Computer Vision**

**Coursework**

**Submission**

**Your name**

**Student number**

**Transformations**

**Question 1(b):**

Your image

**Rotated images:**

θ = -50 deg

θ = 60 deg

θ = 30 deg

θ = 120 deg

**Skewed images:**

θ = 10 deg

θ = 40 deg

θ = 60 deg

**Your comments:**

**Question 1(c):**

θ2=50 and θ1=20 clockwise

θ1=20 clockwise and θ2=50

**Your comments:**

**Convolution**

**Question 2(b)**:

**Designed kernel:**

Averaged image

Original image

**Your comments:**

**Question 2(c):**

**Filtered image with kernel A**

**Filtered image with kernel B**

**Your comments:**

**Question 2(d):**

A followed by A

**A followed by B**

**B followed by A:**

**Your comments:**

**Histograms**

**Question 3(a):**

**Two non-consecutive frames:**

Image 2

Image 1

**Corresponding colour histograms:**

Histogram 2

Histogram 1

**Your comments:**

**Question 3(b):**

**Two consecutive frames:**

It

It+1

**Histograms:**

Histogram of It

Histogram of It+1

Intersection result

**Question 3(b):**

**Intersection result for a video sequence:**

Intersection result

Normalized intersection result

**Your Comments:**

**Question 3(c):**

**Comments:**

**Texture Descriptors and Classification**

**Question 4(a)**

**Three non-consecutive windows**

W1

W3

W2

**LBP of windows**

LBP1

LBP3

LBP2

**Histograms of LBPs**

H1

H3

H2

**Question 4(b)**

**Two example images:**

Face image

Car image

Face descriptor

Car descriptor

**Descriptors:**

**Your comments:**

**Question 4(b)**

**Block diagram of classification process**

**Your comments:**

**Question 4(c)**

**Your comments:**

**Question 4(d)**

**Your comments:**

**Question 4(e)**

**Your comments:**

**Object Segmentation and Counting**

**Question 5(a)**

**Original frames:**

Reference frame

Selected frame 1

Selected frame 2

**Frame differencing:**

**Threshold results:**

**Question 5(b)**

**Original frame:**

Selected frame 1

Selected frame 2

**Frame differencing:**

**Threshold results:**

**Your comments for 5a,5b:**

**Question 5(c)**

Generated background

**Your comments:**

**Question 5(d)**

Bar plot

**Your comments:**